

21. ☒ The following fees are submitted:**BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):**Neither international preliminary examination fee (37 CFR 1.482)  
nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO  
and International Search Report not prepared by the EPO or JPO ..... \$1000.00International preliminary examination fee (37 CFR 1.482) not paid to  
USPTO but International Search Report prepared by the EPO or JPO ..... \$860.00International preliminary examination fee (37 CFR 1.482) not paid to USPTO  
but international search fee (37 CFR 1.445(a)(2)) paid to USPTO ..... \$710.00International preliminary examination fee (37 CFR 1.482) paid to USPTO  
but all claims did not satisfy provisions of PCT Article 33(1)-(4) ..... \$690.00International preliminary examination fee (37 CFR 1.482) paid to USPTO  
and all claims satisfied provisions of PCT Article 33(1)-(4) ..... \$100.00**ENTER APPROPRIATE BASIC FEE AMOUNT =****CALCULATIONS PTO USE ONLY**

\$ 860.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30  
months from the earliest claimed priority date (37 CFR 1.492(e)).

\$ 0.00

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$
Total claims	13 -20 =	0	x \$18.00	\$ 0.00
Independent claims	1 -3 =	0	x \$80.00	\$ 0.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$ 0.00

**TOTAL OF ABOVE CALCULATIONS =**

\$ 860.00

☒ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above  
are reduced by 1/2.

\$ 0.00

**SUBTOTAL =**

\$ 860.00

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30  
months from the earliest claimed priority date (37 CFR 1.492(f)).

\$ 0.00

**TOTAL NATIONAL FEE =**

\$ 860.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be  
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +

\$ 40.00

**TOTAL FEES ENCLOSED =**

\$ 900.00

Amount to be  
refunded: \$

charged: \$

a. ☐ A check in the amount of \$ \_\_\_\_\_ to cover the above fees is enclosed.b. ☒ Please charge my Deposit Account No. 13-3848 in the amount of \$ 900.00 to cover the above fees. A duplicate copy of this sheet is enclosed.c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any  
overpayment to Deposit Account No. 13-3848. A duplicate copy of this sheet is enclosed.d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. Credit card  
information should not be included on this form. Provide credit card information and authorization on PTO-2038.**NOTE:** Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR  
1.137 (a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

**00157**

PATENT TRADEMARK OFFICE

SIGNATURE

James R. Franks

NAME

42,552

REGISTRATION NUMBER

Process for the production of low-viscosity water-soluble cellulose ethers.

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The technological properties of cellulose ethers are highly dependent on the viscosity of their solutions. Although primarily medium-viscosity cellulose ethers, i.e. those with average molecular weight are processed, high- and low-viscosity cellulose ethers have nevertheless also achieved importance.

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Low-viscosity cellulose ethers, which also have a low molecular weight in comparison with medium- and high-viscosity cellulose ethers, can in principle be manufactured in two different ways. Either a low-molecular alkali cellulose is taken as the basis and etherified, or a finished cellulose ether is broken down to the desired molecular weight.

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Using a low-molecular alkali cellulose as the basis and producing a cellulose ether by etherification makes the subsequent cleaning process more difficult. The cellulose ether contains a considerable number of short-chain components, which are swollen greatly or washed out by the washing media.

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The second possible method mentioned, of breaking down higher-molecular cellulose ethers into low-molecular, low-viscosity cellulose ethers can be achieved by the action of oxidising agents, for example hypochlorite or hydrogen peroxide.

The oxidative decomposition of high-viscosity cellulose ethers can be carried out after the cleaning process. This avoids washing losses and difficulties during the washing process.

The specifications listed below give a summary of the processes currently used to break down high-viscosity cellulose ethers after etherification and washing:

ORIGINAL - DEPOSIT

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I hereby certify that this paper or leaf is being deposited with the United States Postal Service "Express Mail" Post Office to Addressee service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231

Donna J. Yeatch  
(Name of person mailing paper or leaf)